

No.

200300144



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**DJ International Seeds and Rutgers,
The State University of New Jersey**

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC FURNISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE APPLICANT(S) TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR PROPAGATING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, TALL

'Kalahari'

*In Testimony Whereof, I have hereunto set my hand
and caused the seal of the Plant Variety
Protection Office to be affixed at the City of
Washington, D.C. this twelfth day of September,
in the year two thousand and seven.*

Attest:

[Signature]

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

[Signature]
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER DLF International Seeds and Rutgers, The State University of New Jersey (BT: 7/14/2004)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME CIS-TF 35	3. VARIETY NAME Kalahari
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) PO Box 229/175 West H Street Halsey, OR 97348 USA		5. TELEPHONE (include area code) 541-369-2251	FOR OFFICIAL USE ONLY PVPO NUMBER #200300144 FILING DATE 2/06/2003
6. FAX (include area code) 541-929-4087		7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Coporation	
8. IF INCORPORATED, GIVE STATE OF INCORPORATION Oregon		9. DATE OF INCORPORATION 1972	

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)

Stephen W. Johnson
DLF International Seeds
PO Box 229/175 West H Street
Halsey, OR 97348

FILING AND EXAMINATION FEES:


\$ **2,705.00**
DATE **2/06/2003**
CERTIFICATION FEE:
\$ **768.00**
DATE **7/17/2007**

11. TELEPHONE (include area code) 541-369-2251	12. FAX (include area code) 541-929-4087	13. E-MAIL STEVEJ@intlseed.com
14. CROP KIND (Common Name) Tall Fescue	16. FAMILY NAME (Botanical) Graminae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.
15. GENUS AND SPECIES NAME OF CROP Festuca arundinacea	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23)
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input checked="" type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) Stephen Johnson		NAME (Please print or type)	
CAPACITY OR TITLE Director of Research	DATE 2-4-03	CAPACITY OR TITLE	DATE

(See reverse for instructions and information collection burden statement)

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
 (2) the details of subsequent stages of selection and multiplication;
 (3) evidence of uniformity and stability; and
 (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
 (1) identify these varieties and state all differences objectively;
 (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use ☐ comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

September 16, 2002 USA

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Exhibit A

ORIGIN AND BREEDING HISTORY OF KALAHARI TALL FESCUE

Kalahari tall fescue (*Festuca arundinacea*) was developed by ~~Cebeco~~ ^{DLF} International Seeds using germplasm obtained from the New Jersey Agricultural Experiment Station. A majority of the parental germplasm of Kalahari tall fescue traces its origin to plants selected from old turfs of the United States in a germplasm collection program initiated in 1962. In this project attractive clones were selected from old turfs in Birmingham, Alabama; Athens, Atlanta, and Milledgeville, Georgia; Preston, Idaho; Baltimore, Maryland; Bayonne, Jersey City, Elizabeth, Princeton, and Cape May, New Jersey; eastern North Carolina; Philadelphia, Pennsylvania; Nashville, Tennessee; Lexington, Kentucky; Cincinnati, Ohio; Dallas, Texas; and northern Mississippi. The origins of the selected plants were unknown. All were large patches of turf surviving in stressful environments indicating that they had persisted and developed over a period of many years. In addition, approximately 20 percent of the germplasm used in the development of Kalahari traces to the variety Rebel, which was bred mainly using material from old turfs in New Jersey.

The plants collected from old turfs were established in spaced-plant nurseries and/or frequently mowed clonal evaluation trials at Rutgers University. The most promising plants were identified by their persistence and appearance in the nurseries, clonal tests, and single-plant progeny trials under turf maintenance. Intercrosses of the best performing plants were subjected to varying cycles of phenotypic and genotypic selection depending on their date of collection. New sources of germplasm were added to the breeding program as it became available from the continuing collection program. Each cycle of selection showed continued progress in producing lower-growing, darker green, attractive plants with improved turf performance scores.

Large numbers of single-plant progenies were seeded in turf evaluation trials in North Brunswick, New Jersey in 1992 and near Adelphia, New Jersey in 1995. The seed used for these progeny evaluations was harvested from spaced-plant nurseries at Adelphia following varying cycles of phenotypic and genotypic selection of germplasm from old turfs and germplasm selected from or related to Rebel tall fescue.

Two thousand five hundred plants were selected from the best performing turf plots in the 1992 test sown at North Brunswick and the 1995 tall fescue trial at Adelphia. These plants were established in a spaced-plant nursery at Adelphia in the fall of 1996. Approximately 25% of the plants in this nursery were rouged for light green color, poor seed yield potential, disease susceptibility and unattractive appearance. The plants left were allowed to inter-pollinate in the nursery. Seed harvested from 30 plants with the superior floret fertility, later maturity, dwarf growth habit, high seed yield and attractive dark green appearance at the time of harvest was used to establish a turf plots in the fall of 1997 at Adelphia. In addition, one gram of each entry was sent to ~~Cebeco~~ ^{DLF} International

* CISI = DLF International Seeds
(BT: 6/15/2003)

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Seeds ~~Inc. (CISI)~~ ^(DLF) where it was used to establish a spaced plant nursery at CISI's Research Station near Tangent, Oregon. This nursery consisted of 120 plants from each of the 30 families. ~~(8/15/2004)~~

From the fall of 1997 through the spring of 1999 the Oregon nursery and the New Jersey turf plots were observed. In the late spring of 1999 sixteen plants were selected from the nursery and crossed in isolation. These plants were selected from eight of the 30 families. Selection was based on family turf performance, darker green color and dense tillering. Following seed ripening the 16 plants in the cross were harvested separately. A portion of the seed from each plant was used to establish progeny turf plots near Adelphia, New Jersey and Tangent, Oregon in the fall of 1999. Part of the seed was also used in 1999 to plant a spaced plant nursery near Tangent. This nursery consisted of four replications of 60 plants of each of the 16 families for a total of 3840 plants. Prior to flowering in the summer of 2000 two of the 16 families were cut back due to poor performance in progeny turf trials. In the remaining 14 families approximately 10% of the plants that had poor vigor, or coarse leaves were removed. The remaining plants were allowed to interpollinate and following seed ripening were bulk harvested. This seed is the stock seed of the variety. A supply of this seed is maintained by ~~Ecce International Seeds~~ ^(DLF) and it may be used to establish breeder seed fields as necessary. ~~(8/15/2004)~~

The variety Kalahari has appeared uniform and stable during multiplication from breeder generation to foundation generation during the years 2001-2002. Kalahari has a small (<5%) percentage of variants that are somewhat taller and coarser than the rest of the population. The percentage of these variants appears to be uniform and stable when seed is multiplied from breeder to foundation generation.

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EXHIBIT B**Statement of Distinctness**

Kalahari tall fescue (*Festuca arundinacea*) is a medium-late maturity variety with a short mature plant height.

Kalahari is most similar to Silverado. Kalahari differs from this variety in characteristics including, but not necessarily limited to the following:

- 1) Kalahari has a significantly shorter mature plant height than Silverado when grown in western Oregon (68.9 cm vs. 77.9 cm) (see Table 2).
- 2) Kalahari has a significantly longer panicle length than Silverado when grown in western Oregon (27.8 cm vs. 20.3 cm) (see Table 2).

EXHIBIT C
(TALL & MEADOW FESCUES)U.S. DEPARTMENT OF AGRICULTURE
PLANT VARIETY PROTECTION OFFICE, AMS, USDA
NATIONAL AGRICULTURAL LIBRARY Bldg., Rm. 500
10301 BALTIMORE Blvd.
BELTSVILLE, MD 20705OBJECTIVE DESCRIPTION OF VARIETY
TALL & MEADOW FESCUES
(*Festuca* spp.)

NAME OF APPLICANT(S) <u>DLF International Seeds and Rutgers, The State University of New Jersey</u>	TEMPORARY DESIGNATION CIS-TF 35, TF 35	VARIETY NAME Kalahari
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code) PO Box 229 Halsey, OR 97348	FOR OFFICIAL USE ONLY PVPO NUMBER 200500144	

Place the appropriate number that describes the varietal characteristic of this variety in the boxes below. Use leading zeroes when necessary (e.g. 089). Characteristics described, including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characteristics marked with an asterisk * are characteristics which should be recorded.

* 1. SPECIES: (With comparison varieties, use varieties within the species of the application variety)

1 1 = *F. arundinacea* (Tall)Turf Types

1 = Kentucky 31 2 = Rebel 3 = Olympic 4 = Bonanza 5 = Arid 6 = Rebel II
7 = Shortstop 8 = Silverado 9 = Rebel Jr. 10 = Mini Mustang 11 = Crewcut 12 = Bonsai

Forage Types

20 = Kentucky 31 21 = Martin 22 = Forager 23 = Mozark
24 = Kenhy 25 = AU Triumph 26 = Pawn 27 = Cajun

2 2 = *F. pratensis* (Meadow)

30 = Admira 31 = Beaumont 32 = Conzessa 33 = Ensign 34 = Trader

* 2. CYTOLOGY:

42 Chromosome Number

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

2 Transition Zone 2 West 0 Northeast Other (Specify):

* 4. MATURITY: (Date First Headed, 10% of Panicle Emergence)

6 Maturity Class 1 = Very early () 2 = AU Triumph 3 = Early (Fawn) 4 = K31, Kenhy 5 = Medium (Rebel)
6 = Bonanza 7 = Late (Silverado) 8 = 9 = Very late

Date Headed May 30Location western Oregon4 Days earlier than 12Maturity same as 4 Comparison Variety2 Days later than 6

* 5. MATURE PLANT HEIGHT CM: (Average of 100 culms * INTERNODE LENGTH CM:

from crown to top of panicle, if panicle is nodding, straighten)

(First internode subtending the flag leaf)

76.2 cm Height36.2 cm Internode length

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 cm shorter than N/A13.4 cm shorter than 6

Height same as

12

Comparison Variety

Length same as

9

Comparison variety

9.1 cm taller than7 cm longer than N/A

* HEIGHT AT EAR EMERGENCE CM: (Flag leaf height from crown to flag leaf node)

28.5 cm Height6.6 cm shorter than 11

Height same as

12

Comparison Variety

 cm taller thanN/A

* 5. GROWTH HABIT: (Mature Plants)

3

1 = Prostrate ()

3 = Semiprostrate ()

5 = Horizontal ()

7 = Semi-erect (Rebel)

9 = Erect (Mini Mustang)

* 7. RHIZOMES (Psuedo):

 mm Length1 1 = Absent ()

2 = Rare (Rebel)

3 = Common ()

* 8. LEAF BLADE: (Tiller leaves/ turf color)

6.1 Color:

1 = Light green ()

3 = Medium light green ()

5 = Green ()

7 = Medium dark green ()

9 = Very dark green ()

5.7

Specify rating of comparison variety (Silverado)

* 2 Anthocyanin:

1 = Absent ()

9 = Present ()

* 1 Basal Hairs: 1 = Absent ()

9 = Present ()

* 5 Margins:

1 = Smooth ()

5 = Semi-rough ()

9 = Rough ()

* 6 Width Class: 1 = Very coarse ()

3 = Coarse ()

5 = Medium ()

7 = Fine ()

9 = Very Fine ()

* TILLER LEAF LENGTH CM: (First leaf subtending the flag leaf)

14.5 cm Tiller Leaf Length6.5 cm shorter than10

Length same as

8

Comparison Variety

4.8 cm longer than12

* TILLER LEAF WIDTH MM:

7.4 mm Tiller Leaf Width1.7 mm narrower than 4

Width same as

8

Comparison variety

0.8 mm wider than12

8. LEAF BLADE: (continued)

FLAG LEAF LENGTH CM:

12.3 cm Flag Leaf Length2.7 cm shorter than 1Length same as 8 Comparison Variety4.8 cm longer than 12

FLAG LEAF WIDTH MM:

5.9 mm Flag Leaf Width1.3 mm narrower than 4Width same as 8 Comparison variety1.6 mm wider than 12

* 9. LEAF SHEATH: (Basal Portion)

* 9 Anthocyanin (seedling): 1 = Absent (K31) 9 = Present ()* 5 Auricle Hairiness: 1 = Absent () 9 = Present ()

* 10. PANICLE: (At seed maturity except where noted.)

* 5 Shape: 1 = Narrow-tapering () 5 = Ovate () 7 = Oblong () 9 = Other (specify)* 5 Type: 1 = Compact (appressed) 5 = Intermediate () 7 = Open () 9 = Other (specify)* 8 Orientation: 1 = Nodding () 9 = Erect ()* 7 Branch Pubescence: 1 = Glabrous () 9 = Pubescent ()* 1 Anther Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6 = Other (Specify)* 2 Glume Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6 = Other (Specify)* 2 7.8 cm Panicle Length (from base to tip, if nodding, straighten; after anthesis) cm shorter than N/ALength same as 9 Comparison Variety7.5 cm longer than 8

* 11. SEED: (With Lemma & Pelea)

* 2 5 7 3 mg per 1000 seeds4 1 6 mg less than 4Weight same as 7 Comparison Variety mg more than N/APALEA: (Keels or Margins) 4 Hairs: 1 = Absent () 5 = Short (Missouri 96) 9 = Long ()LEMMA: 4 Hairs: 1 = Absent (Kenhy) 5 = Several () 9 = Many (Missouri 96)6.3 mm Lemma Length (Mature) 1.4 mm Lemma width0.7 mm shorter than 4 mm narrower than N/ALength same as 7 Comparison Variety Width same as 7 Comparison variety0.6 mm longer than TF-64 mm wider than N/A

10. PANICLE: (continued)

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Table 1.

Heading dates in Julian days of tall fescue varieties grown near Tangent and Shedd Oregon in 2002. Trials consisted of three replications of each variety with 10 plants per replication. Trials were conducted using completely random designs. Plant spacings were 1.5 feet within rows and 3 feet between rows.

VARIETY	Tangent	Shedd	Average
KY-31	142.4	142.1	142.2
Tomahawk	143.5	143.6	143.6
Bingo	146.2	145.3	145.8
Raptor	147.0	146.1	146.5
Mini Mustang	147.6	149.3	148.5
Rebel II	147.6	147.5	147.6
Hounddog 5	147.8	148.1	148.0
Rebel Jr.	148.6	149.8	149.2
Crewcut	148.7	148.1	148.4
Southern Comfort	149.9	147.8	148.8
Kalahari	150.0	149.7	149.8
Silverado	150.8	151.2	151.0
Bonanza	150.9	148.3	149.6
TF 64	152.7	151.3	152.0
Shortstop	153.9	151.7	152.8
Bonsai	154.9	152.8	153.8
LSD @ 0.05	2.0	2.1	

Table 2.

Morphological measurements of tall fescue cultivars grown near Tangent and Shedd Oregon in 2002. Trials consisted of three replications of each variety with 10 plants per replication. Plants were spaced 1.5 feet apart within a row and rows were spaced 3 feet apart.

VARIETY	Canopy Leaf Length (cm)			Plant Height (cm)			Internode Length (cm)			Flag Leaf Height (cm)		
	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average
KY-31	41.26	25.94	33.60	117.90	96.46	107.18	56.67	43.43	50.05	55.10	46.10	50.60
Bonanza	33.24	30.01	31.63	98.12	91.98	95.05	51.02	39.57	45.30	46.26	38.10	42.18
Rebel II	34.10	23.87	28.99	109.73	91.13	100.43	55.37	43.89	49.63	47.70	38.93	43.32
Tomahawk	31.56	25.33	28.45	99.83	87.51	93.67	47.05	42.95	45.00	37.31	41.66	39.48
Mini Mustang	27.43	23.14	25.29	93.43	80.63	87.03	42.50	38.79	40.65	38.85	30.05	34.45
Crewcut	28.84	20.09	24.46	99.64	82.96	91.30	45.59	36.66	41.12	40.87	29.40	35.14
Houndog 5	27.35	18.58	22.97	97.59	77.67	87.63	46.33	38.02	42.17	43.53	33.08	38.30
Silverado	29.24	16.51	22.88	90.33	65.40	77.87	43.37	34.09	38.73	34.99	32.29	33.64
Rebel Jr.	24.21	21.52	22.87	91.09	86.85	88.97	36.74	35.22	35.98	35.39	31.54	33.46
Kalahari	25.10	16.24	20.67	76.21	61.53	68.87	41.25	31.12	36.19	33.34	23.73	28.54
Southern Comfort	25.56	15.35	20.46	82.14	66.32	74.23	43.33	36.34	39.84	33.54	26.56	30.05
Shortstop	21.86	17.79	19.83	81.89	77.73	79.81	36.82	41.05	38.94	37.54	37.01	37.28
Bingo	22.24	16.54	19.39	79.40	69.40	74.40	40.76	34.19	37.48	32.75	33.99	33.37
Raptor	23.47	10.22	16.85	76.37	51.21	63.79	42.07	27.44	34.75	32.80	20.12	26.46
TF 64	16.64	11.80	14.22	63.32	47.75	55.54	32.39	27.33	29.86	24.58	22.60	23.59
Bonsai	15.52	9.43	12.48	75.61	53.96	64.79	39.78	29.45	34.61	28.22	22.12	25.17
LSD 0.05	3.20	2.06		5.60	3.56		5.55	5.09		5.19	4.13	

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Table 2 (continued).

Morphological measurements of tall fescue cultivars grown near Tangent and Shedd Oregon in 2002. Trials consisted of three replications of each variety with 10 plants per replication. Plants were spaced 1.5 feet apart within a row and rows were spaced 3 feet apart.

VARIETY	Flag Leaf Length (cm)			Flag Leaf Width (mm)			Tiller Leaf Length (cm)			Tiller Leaf Width (mm)			Panicle Length (cm)		
	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average
Bonanza	18.73	19.53	19.13	8.03	6.06	7.05	23.10	20.44	21.77	9.53	8.61	9.07	23.16	17.13	20.15
Rebel II	16.00	15.72	15.86	6.49	5.17	5.83	20.17	21.04	20.61	7.91	7.67	7.79	21.34	20.29	20.82
Rebel Jr.	14.95	15.69	15.32	6.79	5.57	6.18	19.05	16.26	17.66	8.38	8.06	8.22	25.00	21.07	23.04
KY-31	15.52	14.45	14.98	7.04	5.34	6.19	21.45	20.56	21.01	8.84	8.34	8.59	17.38	19.16	18.27
Mini Mustang	13.21	14.74	13.98	5.71	5.38	5.55	16.68	15.74	16.21	6.87	6.57	6.72	20.57	16.79	18.68
Shortstop	12.80	15.08	13.94	7.81	5.06	6.43	16.85	15.56	16.20	9.15	5.67	7.41	15.00	12.26	13.63
Houndog 5	14.08	12.58	13.33	6.67	4.93	5.80	17.76	15.15	16.46	8.51	6.33	7.42	26.97	25.72	26.35
Tomahawk	15.15	10.97	13.06	5.99	4.69	5.34	18.61	17.05	17.83	8.73	5.67	7.20	22.45	19.68	21.07
Silverado	14.52	10.41	12.47	7.18	5.41	6.30	17.37	14.56	15.97	8.45	6.63	7.54	20.29	20.27	20.28
Crewcut	14.05	10.59	12.32	7.21	5.43	6.32	26.71	14.46	20.58	8.44	5.92	7.18	21.58	19.78	20.68
Kalahari	12.95	11.61	12.28	6.63	5.08	5.86	15.33	13.61	14.47	7.80	6.93	7.37	25.96	29.69	27.83
Southern Comfort	13.31	10.26	11.79	6.53	5.07	5.80	16.22	13.19	14.71	7.62	6.81	7.21	14.71	12.37	13.54
Raptor	10.66	11.70	11.18	5.34	4.81	5.07	15.19	9.69	12.44	6.61	5.45	6.03	20.99	20.88	20.94
Bingo	10.99	10.49	10.74	5.81	4.97	5.39	14.72	15.75	15.24	7.57	7.34	7.46	18.33	14.99	16.66
TF 64	8.45	6.99	7.72	4.67	2.89	3.78	11.90	10.08	10.99	6.37	4.12	5.25	17.56	14.79	16.18
Bonsai	8.69	6.24	7.47	5.41	3.08	4.25	10.66	8.69	9.68	6.47	4.68	5.57	17.58	16.28	16.93
LSD 0.05	1.93	2.33		0.79	0.90		4.32	2.55		1.06	0.98		2.49	2.83	

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Table 3.

Leaf characteristics of tall fescue varieties grown near Tangent and Shedd Oregon

NAME	Leaf Color (1-9; 9=dark green)			Leaf Width (1-9; 9=very narrow)			% Plants with Leaf Anthocyanin		
	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average
TF 64	7.2	6.9	7.0	7.1	7.0	7.0	25.3	23.3	24.3
Raptor	6.6	6.2	6.4	6.0	6.4	6.2	24.7	17.0	20.8
Bonsai	6.5	6.5	6.5	7.1	6.9	7.0	10.0	8.3	9.2
Bingo	6.3	6.2	6.2	6.2	6.0	6.1	14.7	29.0	21.8
Kalahari	6.2	6.1	6.2	6.0	5.5	5.7	8.3	26.7	17.5
Silverado	6.0	5.4	5.7	5.4	5.3	5.4	17.7	20.0	18.8
Tomahawk	6.0	5.7	5.8	5.6	5.0	5.3	38.3	31.3	34.8
Houndog 5	5.8	4.6	5.2	5.3	4.6	4.9	37.0	27.7	32.3
Shortstop	5.8	4.6	5.2	5.4	5.0	5.2	19.0	26.7	22.8
Southern Comfort	5.8	5.8	5.8	5.7	5.5	5.6	30.3	41.0	35.7
Crewcut	5.5	5.0	5.3	5.2	5.6	5.4	31.0	54.3	42.7
Rebel Jr.	5.5	5.2	5.4	5.2	5.0	5.1	33.0	59.0	46.0
Mini Mustang	5.4	5.0	5.2	5.4	4.9	5.1	29.3	32.3	30.8
Rebel II	5.3	5.3	5.3	5.0	4.5	4.8	40.0	60.7	50.3
Bonanza	4.8	4.4	4.6	4.8	4.0	4.4	48.3	60.0	54.2
KY-31	4.2	2.7	3.4	3.4	3.1	3.3	74.3	52.3	63.3
LSD @ 0.05	0.6	0.6		0.6	0.5		23.2	15.0	

Table 4.

2002 Panicle Traits of Tall Fescue Varieties Grown Near Tangent and
Shedd, Oregon

NAME	% of Plants with Erect Panicles			% of Plants with Panicle Branch Pubescence		
	Tangent	Shedd	Average	Tangent	Shedd	Average
TF 64	100.00	100.00	100.00	32.67	18.33	25.50
Raptor	100.00	93.33	96.67	82.67	38.00	60.34
Bingo	100.00	82.00	91.00	59.00	30.67	44.84
Kalahari	80.00	96.67	88.34	83.33	53.33	68.33
Bonsai	86.67	87.67	87.17	43.33	25.00	34.17
Rebel Jr.	88.00	68.33	78.17	62.33	47.67	55.00
Southern Comfort	64.00	82.33	73.17	68.33	46.67	57.50
Mini Mustang	83.33	47.67	65.50	61.33	29.33	45.33
Shortstop	67.67	58.00	62.84	54.67	48.67	51.67
Silverado	48.33	67.00	57.67	81.00	39.67	60.34
Houndog 5	53.00	51.67	52.34	38.67	17.33	28.00
Tomahawk	39.67	57.67	48.67	62.33	58.67	60.50
Crewcut	39.67	53.33	46.50	45.67	46.67	46.17
Bonanza	52.67	20.67	36.67	59.33	52.33	55.83
Rebel II	30.67	36.00	33.34	52.33	39.33	45.83
KY-31	34.67	24.67	29.67	52.33	30.33	41.33
LSD @ 0.05	17.99	17.37		19.86	15.86	

Table 5.

2002 Seed characteristics of tall fescue varieties grown near Tangent and Shedd, Oregon

NAME	Mg per 1000 seeds			Palea Hairs (1=9; 1=absent to 9=long)			Lemma Hairs (1=9; 1=absent to 9=many)			Lemma Length (mm)			Lemma Width (mm)			Awn Length (mm)		
	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average
KY-31	2876.9	3851.7	3364.3	1.67	2.60	2.13	2.00	4.27	3.13	6.09	5.98	6.04	1.33	1.37	1.35	0.71	0.70	0.71
Tomahawk	2957.8	3662.0	3309.9	1.97	2.57	2.27	2.47	3.20	2.83	7.15	7.21	7.18	1.46	1.53	1.50	0.70	0.85	0.77
Bonanza	2813.4	3164.8	2989.1	1.67	3.07	2.37	3.07	3.60	3.33	6.74	7.23	6.98	1.45	1.70	1.58	0.73	0.85	0.79
Rebel II	2793.1	2934.0	2863.5	2.30	2.57	2.43	3.07	3.60	3.33	6.51	6.30	6.41	1.46	1.43	1.44	0.67	0.98	0.83
Bingo	2546.5	2800.3	2673.4	1.73	2.87	2.30	2.70	3.90	3.30	6.23	6.53	6.38	1.41	1.44	1.43	0.95	1.04	1.00
Raptor	2535.2	2747.6	2641.4	2.60	2.27	2.43	3.03	3.80	3.42	6.30	5.93	6.12	1.40	1.46	1.43	0.91	0.88	0.90
Silverado	2564.4	2702.4	2633.4	1.53	2.23	1.88	2.03	3.00	2.52	6.87	6.61	6.74	1.46	1.49	1.47	1.14	0.95	1.04
Kalahari	2427.6	2718.9	2573.3	2.17	3.73	2.95	3.10	4.30	3.70	6.21	6.28	6.25	1.39	1.43	1.41	1.23	1.00	1.11
Shortstop	2629.2	2508.0	2568.6	1.43	2.33	1.88	2.37	3.23	2.80	6.27	6.44	6.36	1.39	1.43	1.41	0.92	0.89	0.91
Hounddog 5	2361.6	2738.0	2549.8	1.43	2.33	1.88	3.23	3.60	3.42	6.38	6.64	6.51	1.39	1.38	1.39	0.61	1.05	0.83
Crewcut	2428.2	2611.1	2519.7	1.13	2.13	1.63	1.80	3.60	2.70	6.58	6.62	6.60	1.37	1.46	1.42	0.86	1.24	1.05
Southern Comfort	2451.4	2575.5	2513.5	1.33	1.83	1.58	2.07	2.80	2.43	6.49	6.23	6.36	1.35	1.31	1.33	1.13	0.80	0.97
TF 64	2469.1	2553.6	2511.3	2.03	2.93	2.48	4.27	4.37	4.32	5.75	5.64	5.69	1.39	1.37	1.38	0.77	0.71	0.74
Mini Mustang	2406.1	2534.0	2470.1	2.00	2.70	2.35	4.27	3.30	3.78	6.39	7.30	6.84	1.40	1.47	1.44	1.08	1.45	1.27
Bonsai	2376.7	2259.0	2317.9	1.73	2.47	2.10	2.27	3.47	2.87	6.76	6.81	6.79	1.39	1.44	1.41	0.89	1.01	0.95
Rebel Jr.	2456.3	2073.1	2264.7	1.40	2.93	2.17	2.17	2.97	2.57	6.44	6.25	6.35	1.37	1.44	1.40	1.17	0.92	1.04
LSD @ 0.05	204.5	381.8		0.66	0.75		0.81	0.66		0.43	0.56		0.09	0.13		0.37	0.28	

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Table 6.

Net blotch ratings of tall fescue cultivars grown near
Tangent, Oregon. Rating scale is 1-9; 9=no disease.

Cultivar	2002	2003	Average
Bingo	6.00	5.33	5.67
CIS-TF 64	5.67	4.00	4.84
Tomahawk	5.67	3.33	4.50
Rembrandt	5.33	5.33	5.33
Kalahari	5.33	4.67	5.00
Olympic Gold	5.00	5.33	5.17
Tomcat	4.67	6.33	5.50
Houndog 5	4.33	4.33	4.33
Watchdog	4.33	4.33	4.33
Dynasty	4.33	3.33	3.83
Pride	4.00	4.67	4.34
Raptor	4.00	4.67	4.34
Masterpiece	4.00	3.67	3.84
Gooden	4.00	3.33	3.67
LSD @ 0.05	1.46	0.96	

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

**EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP**

1. NAME OF APPLICANT(S)

(05-14/04) DLF International Seeds and Rutgers, The State
University of New Jersey

2. TEMPORARY DESIGNATION
OR EXPERIMENTAL NUMBER
CIS-TF 35

3. VARIETY NAME

Kalahari

4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)

PO Box 229/175 West H Street
Halsey, OR 97348
USA

5. TELEPHONE (Include area code)

(541) 369-2251

6. FAX (Include area code)

(541) 929-4087

7. PVPO NUMBER

#200300144

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.

☒ YES☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.

☒ YES☐ NO

10. Is the applicant the original owner?

☒ YES☐ NOIf no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES☐ NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES☐ NO

If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT F
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S) DLE International Seeds and Rutgers, The State University of New Jersey (dt:7/17/2007)	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) PO Box 229/175 West H Street Halsey, OR 97348 USA	TEMPORARY OR EXPERIMENTAL DESIGNATION CIS-TF 35 VARIETY NAME Kalahari
NAME OF OWNER REPRESENTATIVE (S) Stephen W. Johnson	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) PO Box 229/175 West H Street Halsey, OR 97348 USA	PVP NUMBER #200300144

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Stephen W. Johnson
Signature

June 15, 2007
Date